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OCTOBER, 1987

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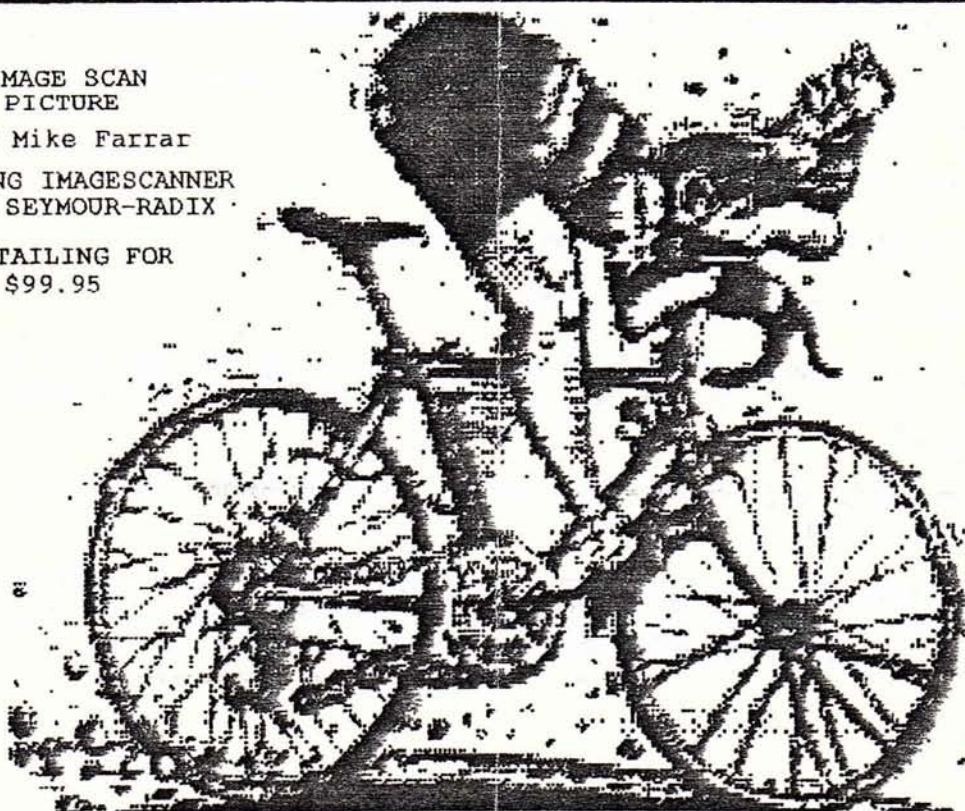
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XL RAMDISK

Here's how to create a 101-sector RAMdisk while working in BASIC on your 800XL. This tip has appeared in several users group newsletters, including the April, 1987 The Northwest Phoenix (Arizona) Atari Connection's Between Bytes.

This method is different from the January, 1987 ANTIC RAMdisk Tech Tip which was written on the monthly DOS disk. The following steps for this 101-sector RAMdisk must be repeated whenever you want to use it:

1. Boot your 800XL with a DOS 2.5 disk containing RAMDISK.COM.
2. Type POKE 1802,PEEK(1802)+128 and press [RETURN].
3. Type DOS and press [RETURN].
4. Press [L] and [RETURN]. Type RAMDISK.COM and press [RETURN].
5. Press the following: [I] [RETURN] [8] [RETURN] [Y] [RETURN].
6. Press the following: [H] [RETURN] [8] [RETURN] [Y] [RETURN].
7. Press [D] and [RETURN]. Type D8:DOS.SYS and press [RETURN] [Y] [RETURN].
8. Press [B] and [RETURN].
9. Type POKE 5439,56 and press [RETURN].
10. Type DOS and press [RETURN].

You should now see the DOS menu almost instantly. You can store anything on drive 8 if (A.) it fits and (B.) you copy it to a regular disk before turning your computer off.

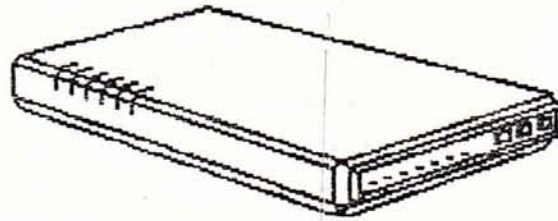
From the DOS menu, if you press [N] and [RETURN], MEM.SAV will be created on drive 8.

If you have other programs of this sort, why not write a text file and send it to Mike Farrar, c/o Cottonwood Computers, P.O. Box 818, Cottonwood, Ca 96022, or upload it to his BBS, Marturia, 916-243-0297.

CHECKING OUT THE SX212 MODEM

Heck of a deal!

by Bob Wooley SLCC



For those of you with no modem, or a SIO connect 8-bit modem, or a 300 baud modem (leave anybody out?), Atari has got a great new product for you - the SX212 1200 baud modem. It has a standard RS-232 interface for those users with an 850, or an ST, or a P:R connection and an SIO connector for those 8-biters who lack an RS-232 box. It is Hayes compatible and even has a nice row of LEDs accross the front of the unit to keep you informed of its status (High Speed, Auto Answer, Carrier Detect, Off Hook, Receive Data, Send Data, Terminal Ready, and Modem Ready). The best thing about this guy is that it only costs \$99.95 - List Price. A product of increasing integration, it's another level up on the

path to single chip, 1200 baud, modems - much like the 300 baud XM301 that preceded it.

I can remember my first RS-232 modem. It was also Hayes compatible, which seems to mean that it has to have 6 million switches set before your computer will talk to it. Not the SX212. Absolutely nothing to set on this guy. Move it from your 8-bit to your 16-bit system ... works just fine with no switch juggling. Aren't any to mess with, anyway. My X-Ray Vision tells me that there are jumpers inside, but it isn't something the average guy is going to fool with. I tried the 212 on my ST with FLASH. Although I am not any kind of TP expert, the modem worked just fine. It seemed to be perfectly happy with XModem downloads and such. Even the operator trying to interrupt my call didn't bring down the modem. Lots of garbage, but carrier stayed up. This is exactly



what the computer industry needs - an affordable product that you just pull from the box and run!



When it came to my 8-bit system, I hit a little snag. Since the modem would connect to the SIO port, it has to either emulate an 850 and the Hayes modem, or not emulate the 850 and not work on my 8-bit. Guess which one I got?? Works just fine on the P:R Connection as a Hayes (knew that since it worked on the ST). Didn't work at all as an 850. I tried a Status command to every address on the SIO buss and got no response from the SX. One thing for sure, no matter how it works, the modem requires a handler. Some devices load their own handler and some programs replace them with the handler that the program wants. So, without a handler, I had no chance to make the thing work. If the device didn't even talk to the CPU on the SIO buss, how could the handler talk to the modem? The XM301 modem came with an excellent communications program and plenty of documentation on disk to fully describe the handler necessary for that

device. I quickly learned that an SIO cable (which is not included in the box - for obvious reasons. You can't use the SIO feature without the handler) and a version of EXPRESS will become available from Atari at some future date. I should hope so. Not requiring a P:R Connection or an 850 can save an 8-bit user as much as the cost of the modem itself. This is one of the greatest assets of this device, the ability to run without additional interfaces. Needless to say, this was most discouraging. Maybe a little hacking could help?



There was (is?) a company called Advanced Interface Devices that made a simple RS-232 adapter for the Atari SIO buss. Since the SIO is already a serial buss that can be programmed to operate in almost any mode, they thought they could just write a handler and wire up a cable that would suffice for RS-232 operation. They produced the R-Verter and managed to do exactly what I described - run the SIO as an RS-232 serial interface. With this in mind, and a little more X-Ray Vision, it appeared

That Atari was using the same method on the SX212. There is a two chip modem set, a couple of RS-232 receiver/driver chips, an audio amp, an LS logic chip, and some sort of clock generator inside this modem. It would be very unusual for a modem chip set to be able to talk to an Atari SIO buss directly (the XM301 uses a microprocessor to operate as a modem and to talk to the buss). So, I had to conclude that Atari used the R-Verter approach. Close inspection of the SIO pins indicate that the -Command line (pin7) is not even connected in the SX212. No way to do SIO without that pin. No SIO means an RS-232 emulator. The only one that I am aware of is the AID R-Verter.



So, I logged on to CompuServe and looked for an R-Verter handler in DL2. Luckily, I found exactly what I needed in a file called RVHAND.XMO. It is an R-Verter handler that has been re-compiled for use with HOMETERM. Following the RVHAND.DOC file, I created a copy of HOMETERM that would run on the R-Verter. Booted up on my SX212 and got the 850 status screen. Even



though the modem is directly connected, the program thinks it is talking thru an 850. All the commands that I needed worked just fine on HOMETERM - downloads, disk directories, pauses, everything! Tom Neitzel has passed on the word that the same handler will allow the SX212 to run Amodem 7.4, a program that I am not familiar with, but is very popular. I have not tried to replace the handler in EXPRESS with the R-Verter code. I don't think that task will be as simple as re-compiling the code, since EXPRESS seems to use all available memory. None the less, those 8-bit users who own SIO connect 300 baud modems can upgrade to the SX212 and start tele-computing immediately with Amodem or HOMETERM.

One or two more comments.

The manual states that the modem cannot be used on an 800XL with a cassette recorder. The Motor line is fed into the modem and is grounded thru a 680 ohm resistor. This appears to

upset the 800XL or the recorder or somebody. I don't see any significant differences between the 800XL and the rest of the Atari line in this respect, so expect this restriction to apply to all 8-bit models.

A suggestion is made to place the modem on top of your disk drive and the phone on top of the modem. Some telephones have magnets in them - put it someplace else if you are not sure. Some disk drives generate considerable heat, while the SX212 seems very cool. I put my modem under my drive leaving the vents on top of the drive clear for good cooling.

The bottom line on this modem is that it is a great value for the money, performs well and can be used on either 8 or 16 bit systems with a minimum of expertise. The 8-bit software is not yet available from Atari, but even that can be fixed for the time being. No modem offers you so much for so little. Don't overlook this bargain.



THE NEW ATARI ST ROMS ! ! !

TOS ROMS -- BLITTER VERSION

The 1987 revision of TOS is scheduled for release in conjunction with the new "blitter" chip. The new TOS has been upgraded to include support for the hardware blit as well as retaining the software blit functions for full compatibility with older software which relies on hardware timing (a definite no-no).

Changes in the new ROMs are:

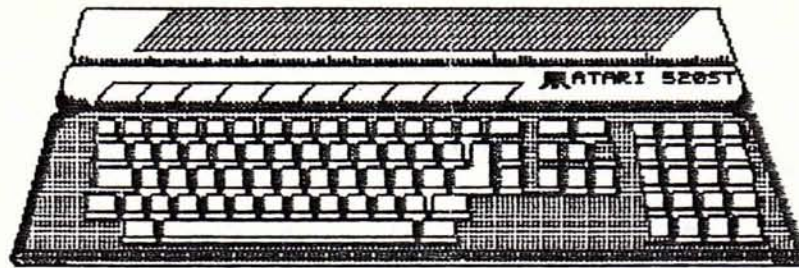
- RS232: The RS232 handler has been completely rewritten. RTS/CTS handshaking now works. Baud rates 50 and 75 now work.
- CLOCK: Support is now included for the Mega ST's built-in, battery- backer-up realtime clock. The realtime clock is automatically used by the XBIOS gettime and settime functions for the IKBD. The GEMDOS clock is reset from the realtime clock at the termination of every program.
- STARTUP: Memory clear at system startup is much faster, improving performance on multi-megabyte systems.
- DESKTOP: The desktop now includes a control for deactivating/activating the blitter chip. Also, the Save Desktop and Print Screen selections will request confirmation. Spurious characters are no longer written to the DESKTOP.INF file. Doing a PRINT or SHOW from the desktop will now display characters with ASCII codes above 127. SHOW and PRINT use a larger buffer now. Single drive copies now require fewer disk swaps.
- CART: Cartridge handling has been revised, eliminating the need for "CARTSTART" code and allowing .TOS and .TTP programs. Lower case letters will now be accepted and passed to an application from the "Open Application Parameter" box.
-
- AES: The AES will now send repeat clicks if the mouse button is held down on the arrow or page controls of a window, which lets a window smooth scroll. The AES underscore bug is now fixed.

APPL_TPLAY and APPL_TRECORD now work. The limit of 30 characters on a line in an alert box is now rigidly enforced.

MOUSE: The mouse redraw can now be set to XOR mode. The system will return after a single click if this is what was requested.

DMA: The DMA bus can now have more than one device attached at powerup time, without any special software.

FLOPPY: The floppy read/write code checks for more errors now. In prior versions, the system would not report a CRC error under certain circumstances; now it will. This hurts some copy protection schemes. The format of the floppy disk has been skewed from track to track to improve disk speed; the XBIOS supports this by using -1 for the skew value and placing a pointer to a one word per sector skew table in the previously unused longword.



VDI: The VDI will now draw arcs with small angles.

BLOS: Character out routines are much faster.

BLITTER: Automatic blitter chip support is included in line-A and VDI calls. The extended inquire will report a larger performance factor than before, allowing applications to check for the presence of the blitter. A new XBIOS call has been added to check for the blitter and to activate or deactivate it. The blit is not reentrant -- line-A and VDI should not be called from within an interrupt.

REGISTER: The registers D0, D1, D2, A0, A1, A2 have always been forfeit when a trap call was made. Now the demise of these occurs under more conditions than before.

MEMORY: Slightly more RAM is used by the system. Programs

that were close to the edge on a 520ST may no longer fit.

VARIABLE: Most undocumented system variables have been moved.
You were warned!

NOTES AND WARNINGS:

1. Some programs depend on the OS always being at \$FC0000. This is **not** cast in stone and will probably change soon. To find the OS header, use the pointer "sysbase" as documented.
2. The 4 megabyte ST puts the screen near the end of accessible RAM. Sloppy programs that have been writing past the end of the screen will give bus errors if they do so on the 4 meg ST.



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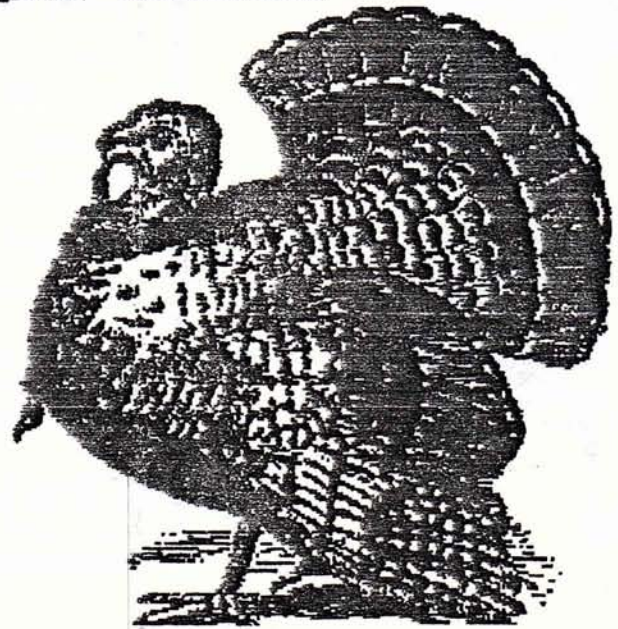
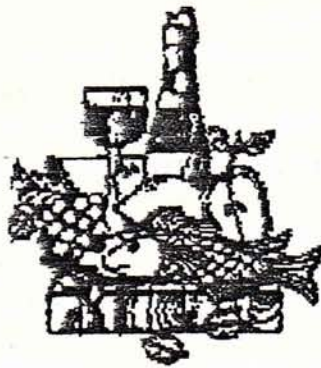
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XL MEMORY EATER XL MEMORY EATER



Want to watch your Atari 800XL eat memory?

Type in:
10 IF PEEK(53279)<>7 THEN END
20 SAVE "D:\JUNK.BAS"
30 SAVE "S:"
40 ??:??:? FRE(0)
50 RUN"D\JUNK.BAS"

This short program by Antic Technical Editor Charles Jackson demonstrates a little-known problem that readers regularly ask us about. The operating system (OS) built into XL computer models adds 16 "garbage" bytes to the end of your Atari BASIC program every time you SAVE it to disk or cassette.

When you RUN this program, it will SAVE itself to disk over and over again. Each time the program SAVES itself, it displays the amount of available memory bytes. Notice that this value decreases by 16 each time around.

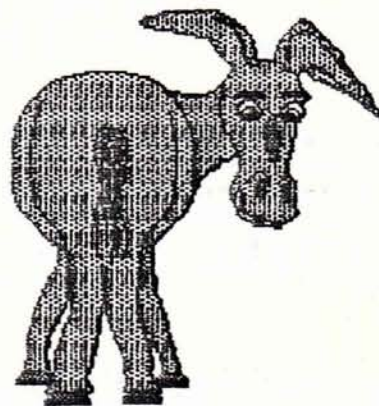
Line 30 lets you see these extra bytes for yourself. The SAVE "S:" command tells your Atari to SAVE your program to the S: -Screen device. In other words, the tokenized version of your program is displayed onscreen each time it is SAVEd. You can actually watch it grow and grow. Hold down any console key to stop the program.

This program will eventually fill your disk (and probably crash it, too). So you should RUN it on a "scratch" disk that doesn't contain other material you might want to keep.

If you're editing a standard BASIC program on an Atari XL, remember that 16 "garbage" bytes will be added to your program each time you SAVE it. But fortunately, you can remove these bytes from your program in four steps!

HERE'S THE CURE:

1. LIST your program to disk.
2. Type NEW.
3. ENTER your program back into the computer.
4. SAVE it back to disk. The "garbage" bytes have been removed.



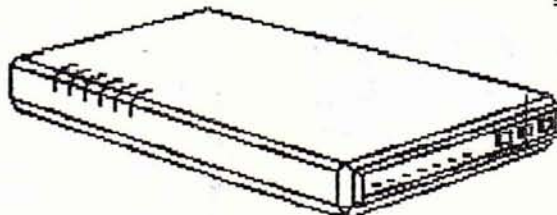
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